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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,924	12/07/2001	Hsin-Hong Huang	10541/775	1505

29074 7590 10/16/2003

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EXAMINER
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GARCIA, ERNESTO

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 10/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/017,924

Applicant(s)

HUANG ET AL.

Examiner

Ernesto Garcia

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 July 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 and 30-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 and 30-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 07 July 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings were received on 7/7/03. These drawings are not acceptable for the reasons below.

The drawings are objected to because the first sheet of the two sheets submitted as corrected sheets contain different figures unrelated to the invention originally submitted to the Office (see attachment). Reference character 30 in Figure 5 should be deleted since 30 does not point directly to a polygonal surface as shown in Figure 2, and the polygonal surface of Figure 2 and Figure 5 are distinct parts and not the same part. Furthermore, the axis 25 is still not aligned from the left side to the right side of 24. Applicant is urged to use a straight edge to confirm this discrepancy. The lead line of reference 40 appears to point to the driven member 24 in Fig. 4. Reference character 24 in Figure 4 should be arrowed as it appears to point to the gear 26.

### ***Claim Objections***

Claims 1, 16 and 30 are objected to because of the following informalities:

regarding claims 1 and 30, the limitation "a driving member" in line 3 should be -- the driving member-- as this member is the same driving member recited in line 1; the

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limitation "a driven member" in line 6 should be --the driven member-- as this member is the same driven member as recited in line 1; and,

regarding claim 16, the limitation "at least a" in line 2 should be --the-- since the portion is the same portion as recited in claim 14 in line 6. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 9-18, 20-23, 25 and 30-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Bender et al., RE34,612.

Regarding claims 9-12, given the structure of Bender et al., below, the method of interfacing the driving member with the driven member is inherently anticipated.

Regarding claim 13, the driving member 12 and the driven member 5 comprise one of a group consisting of a compressor, a pump, a machine tool, a mechanical drive, a generator, and a motor.

Regarding claim 14, a coupling comprising a shaft **60** and a mounting device **66**. The shaft **60** has a polygonal length selected from a group consisting of concave surfaces, convex surfaces and straight surfaces. The mounting device **66** has a matching polygonal length. The shaft **60** or the mounting device **66** has a portion **64** of the polygonal length twisted from about 0 degree 10' to about 1 degree between two straight portions (the two straight portions is divided between the twisted portion).

Regarding claim 15, the mounting device **66** comprises a flange.

Regarding claim 16, the polygonal length of the shaft **60** comprises a male polygonal length with the portion **64** the polygonal length twisted from 0 degree 20' to about 50 radians.

Regarding claims 17, 23 and 32, the polygonal length has a relative eccentricity of from about 1.5% to about 4%.

Regarding claim 18, the shaft **60** or the mounting device **66** is straight.

Regarding claim 20, the Bender et al. discloses a coupling comprising a driving member **66** and a driven member **60**. The driving member **66** has a polygonal length. The driven member **60** has a matching polygonal length. At least a portion **64** of the driving member **66** or the driven member **60** has a twist of from about 0 degree 10' to

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about 1 degree between two straight portions (the portions divided by the twisted portion **60**).

Regarding claim 21, the driving member **66** is selected from a group consisting of an axle, a half axle and a shaft.

Regarding claim 22, the matching polygonal length is a male polygonal length including a twist from about 0 degrees 20' to about 0 degrees 50'.

Regarding claim 25, the driving member **66** or the driven member **60** is straight.

Regarding claim 30, Bender et al. disclose an interface comprising a driving member **66** and a driven member **60**. The driving member **66** has a polygonal length. The driven member **60** has a matching polygonal length. A portion of the polygonal length or the matching polygonal length has a twisted **64** between two straight portions along an axis of the length.

Regarding claim 31, the twist is from about 0 degree 10' to about 1 degree.

Regarding claim 33, the driven member **60** is a shaft having a male polygonal length with a number of sides selected from the group consisting of 3-12.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the German patent 3,511,534, in view of Dymerski et al., 6,533,235.

Regarding claim 1, the German patent discloses in Figure 2 an interface comprising a driving member **12** and a driven member **5**. The driving member **12** has a polygonal length **13,13"** having at least one surface. The driven member **5** has a matching polygonal length **8**. A portion **10** of the polygonal length of the driving member **12** or the driven member **5** is twisted along an axis of the polygonal length **13,13"**. However, the at least one surface is not selected from a group consisting of a concave surface and a convex surface. Dymerski et al. teach a polygonal length **200** having at least one surface selected from a group consisting of a concave surface (two edges of the polygonal length **200** are concaved) and a convex surface as part of a design choice to mate a driving member and driven member. Therefore, as taught by Dymerski et al., it would have been obvious to one of ordinary skill in the art at the time the invention

was made to design the polygonal length having at least one surface selected from a group consisting of a concave surface and a convex surface.

Regarding claim 2, twisting is from 0 degrees 10' to about 1 degrees.

Regarding claim 3, the matching polygonal length **8** comprises a shaft having a male polygonal length.

Regarding claim 5, the driving member **12** comprises a shaft having the polygonal length **13,13"** being a male polygonal length with at least one portion of the length twisted from about 0 degrees 20' to about 0 degrees 50'.

Regarding claim 6, the driving member **12** or the driven member **5** is straight.

Regarding claim 7, the polygonal length **13,13"** has a relative eccentricity of from about 1.5% to about 4%.

Regarding claim 8, the driven member **5** comprises a shaft with having a concave male polygonal length with a number of sides selected from a group consisting of 3 to 12.



Claims 1, 4, 19 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bender, et al., RE34,612, in view of Dymerski et al., 6,533,235.

Regarding claim 1, Bender et al. disclose in Figure 2 an interface comprising a driving member **60** and a driven member **66**. The driving member **60** has a polygonal length (col. 4, line 52) having at least one surface. The driven member **66** has a matching polygonal length (col. 4, line 68 - col. 5, line 1; see Fig. 5). A portion **64** of the polygonal length of the driving member **60** or the driven member **66** is twisted along an axis of the polygonal length. However, the at least one surface is not selected from a group consisting of concave surfaces and convex surfaces. Dymerski et al. teach a polygonal length **200** having at least one surface selected from a group consisting of a concave surface (two edges of the polygonal length **200** are concaved) and a convex surface as part of a design choice to mate a driving member and driven member. Therefore, as taught by Dymerski et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to design the polygonal length having at least one surface selected from a group consisting of a concave surface and a convex surface.

Regarding claim 4, the interface further comprises a second twist (the twist is a second portion after the twist and which aligns with a portion before the twist) along the axis of the length. The second twist is in a direction opposite the portion **64** twisted.

Regarding claims 19 and 24, Bender et al., as discussed above, disclose the shaft **60** having male polygonal length with a number of sides selected from the group consisting of 3 to 12. However, Bender et al. fail to disclose the shaft **60** having the polygonal length comprising a concave male polygonal length. Dymerski et al. teach a polygonal length **200** having at least one surface selected from a group consisting of a concave surface (two edges of the polygonal length **200** are concaved) and a convex surface as part of a design choice to mate a driving member and driven member. Therefore, as taught by Dymerski et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to design the polygonal length having at least one surface selected from a group consisting of a concave surface and a convex surface.

***Response to Arguments***

Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Regarding the rejections based on Bender et al., Applicant's arguments to Bender et al., fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Applicant has argued that Bender et al. do not show a twist at the interface. Applicant is reminded that the drawings filed by applicant have not shown the twist at the interface. Therefore, as much as Bender et al. shows a twist, the twist is shown at the interface.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 703-308-8606. The examiner can normally be reached from 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703-308-1159. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2168.

  
**Lynne H. Browne**  
**Supervisory Patent Examiner**  
**Technology Center 3600**

E.G.

October 14, 2003

Attachment: one marked-up copy of corrected sheet 1 of drawings.

JUL 07 2003  
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not accepted  
10/6/03

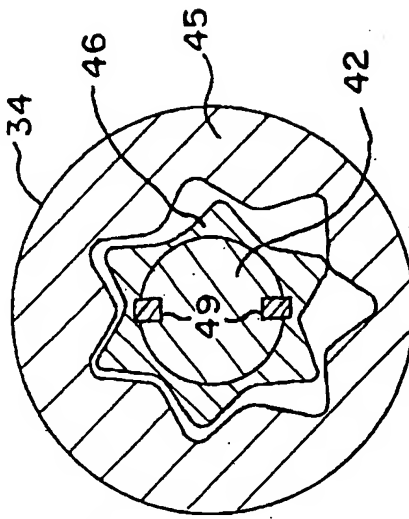
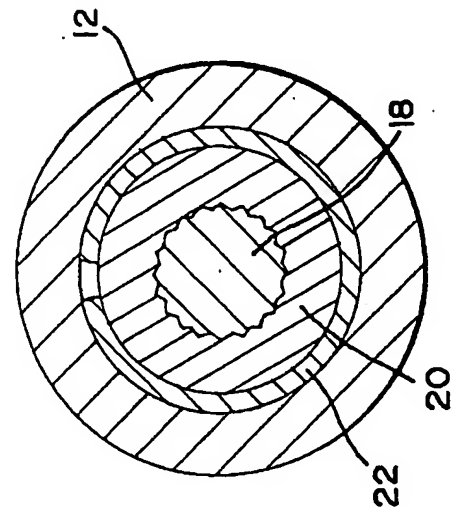
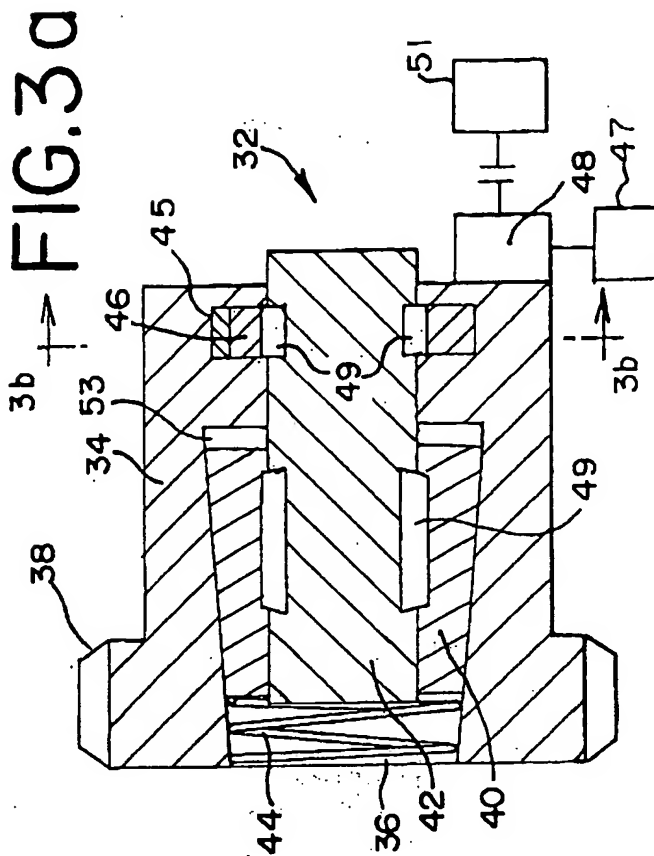
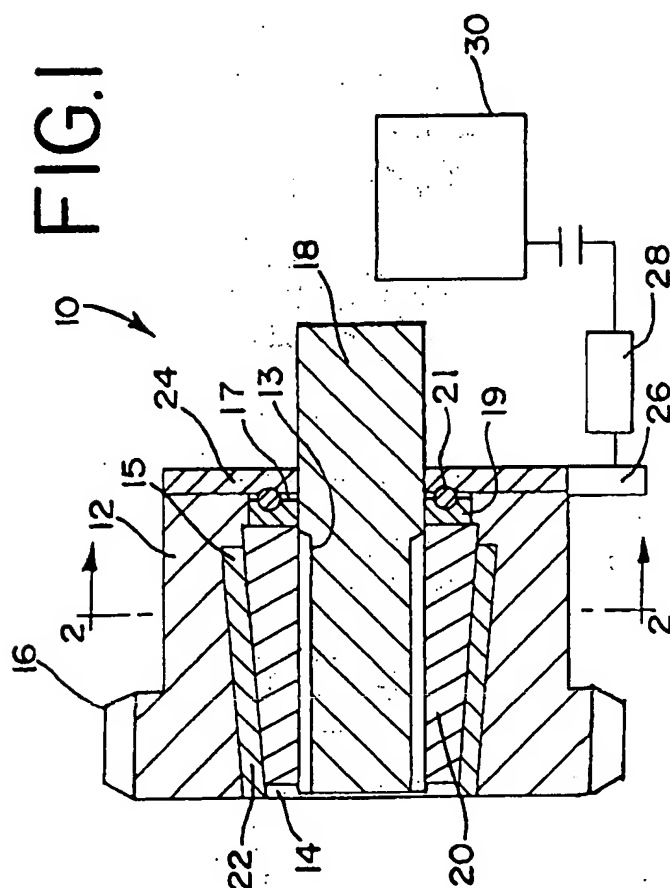


FIG. 3b

FIG. 2

FIG. 1

FIG. 3a